National Institute of Environmental Health Sciences

# Projecting heat-related mortality impacts under a changing climate in the New York City region

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**Abstract:**

OBJECTIVES: We sought to project future impacts of climate change on summer heat-related premature deaths in the New York City metropolitan region. METHODS: Current and future climates were simulated over the northeastern United States with a global-to-regional climate modeling system. Summer heat-related premature deaths in the 1990s and 2050s were estimated by using a range of scenarios and approaches to modeling acclimatization (e.g., increased use of air conditioning, gradual physiological adaptation). RESULTS: Projected regional increases in heat-related premature mortality by the 2050s ranged from 47% to 95%, with a mean 70% increase compared with the 1990s. Acclimatization effects reduced regional increases in summer heat-related premature mortality by about 25%. Local impacts varied considerably across the region, with urban counties showing greater numbers of deaths and smaller percentage increases than less-urbanized counties. CONCLUSIONS: Although considerable uncertainty exists in climate forecasts and future health vulnerability, the range of projections we developed suggests that by midcentury, acclimatization may not completely mitigate the effects of climate change in the New York City metropolitan region, which would result in an overall net increase in heat-related premature mortality.

**Source:** http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2040370

## Resource Description

**Climate Scenario :**

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

**Special Report on Emissions Scenarios (SRES) Scenario:** SRES A2, SRES B2

**Early Warning System:**

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

**Exposure :**

weather or climate related pathway by which climate change affects health

Temperature

**Temperature:** Fluctuations

**Geographic Feature:** ☑

resource focuses on specific type of geography

Urban

**Geographic Location:** ☑

resource focuses on specific location

United States

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

**Other Health Impact:** heat related mortality

**Mitigation/Adaptation:** ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

**Model/Methodology:** ☑

type of model used or methodology development is a focus of resource

Outcome Change Prediction

**Resource Type:** ☑

format or standard characteristic of resource

Research Article

**Timescale:** ☑

time period studied

Medium-Term (10-50 years)

**Vulnerability/Impact Assessment:** ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content